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## COMPARISON OF CLINICAL EFFECTIVENESS OF LASER ACUPUNCTURE AND AMITRYTALINE IN DIABETIC PERIPHERAL NEUROPATHY (DPN) A SHAM CONTROLLED RANDOMIZED CLINICAL TRIAL

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### ABSTRACT

**Background:** Painful neuropathy is a very common complication in diabetic patients. Various treatment strategies like manual therapies, conservative management, drug therapy and exercise have been opted for this problem. Studies have shown clinical effectiveness of laser acupuncture as well. On the other hand, Amitriptyline is also a commonly used treatment for this disease. We aim to compare the efficacy of both treatments.

**Objectives:** To assess the effects of laser acupuncture in patients suffering from painful diabetic neuropathy and its comparison with standard of care.

**Patients and Methods:** This study was conducted in Diabetic and Endocrine Management Center (DEMC) Lahore General Hospital, Lahore, Pakistan. A randomized control trial (RCT) was opted and a total of 164 patients were chosen using Non-probability purposive sampling technique. Pain was graded by using a patient friendly Visual Analogue Score (VAS), scoring from 0 to 10. Treatment was done involving organized fortnightly follow ups. Data of all patients was recorded on Performa and was entered and analyzed for descriptive statistics in PASW 18 (IBM®. SPSS).

**Results:** A total of 164 subjects were included in the study who were subdivided into three groups labeled as A, B and C for Laser Acupuncture Treatment, Amitriptyline treatment and controls respectively. The mean age of subjects was  $51.54 \pm 10.46$  in Group A,  $49.38 \pm 10.56$  in Group B and  $51.70 \pm 11.43$  in Group C. The difference of mean ages in all study groups was statistically insignificant ( $p$ -value= 0.469). The average pain score in patients who received laser therapy was  $6.95 \pm 0.91$  before treatment, whereas after treatment it was  $4.31 \pm 0.98$ . The mean pain score in subjects having Amitriptyline before starting the treatment was  $6.87 \pm 0.71$  and after treatment, it was  $6.23 \pm 0.98$ . The mean score for daily life activities in subjects who received laser therapy was  $9.56 \pm 2.37$  before treatment, while after treatment it was  $7.56 \pm 1.54$ . The average score for daily life activities in patients having Amitriptyline before starting the treatment was  $9.05 \pm 1.93$  and after treatment, it was  $8.11 \pm 1.71$ . Average depression and anxiety score in patients receiving laser therapy was  $9.29 \pm 2.28$  before treatment, whereas after treatment it was found to be  $7.42 \pm 1.91$ . Similarly, the mean depression and anxiety score in patients of Amitriptyline group before starting the treatment was  $9.38 \pm 2.21$  and after treatment, it was  $8.38 \pm 2.14$ .

**Conclusion:** The mean score in our study reveals that laser acupuncture shows better outcomes in improvement of pain relief, depression, anxiety and daily life activities compared to amitriptyline in patients of diabetic neuropathy. Depression, anxiety and daily life activities compared to amitriptyline in patients of diabetic neuropathy.

**Keywords:** Diabetic peripheral neuropathy, Acupuncture, Laser acupuncture, Sham acupuncture, Low level laser therapy, Tricyclic anti depressants.

